Harrison Co 1854

Monona Co.

of anemometer

50 revol. = 1/10 mile

Cups travel 1/3 distance wind goes.

3425

12.51
12.46

3290 ft
640
3910

12.35-12.45

6480 ft

12.30-12.35

July 31 to Aug. 6 – 1908
Visited substations & packed.

Aug. 7.
Went to Burlington, looked over field for meteorological [illegible] (Applied Geology & Econ.)

For timbered W. side will use Crapo Park, - the natural timbered slopes.

For east side, will use sandy hills at [illegible] (S. E. of town).

Aug. 8 – Packed & arranged [illegible], etc.

~~5~~ 2

Aug. 9, 1908.

Left Iowa City at 5 AM.
stopped at Des Moines,
with Mr. J. H. Lees went up
river on E. side to place
where excavating of Indian
grave was.

Saw:

Wisconsin drift
section Pleist
formation
Fossiliferous zone - No other drift
Sand stone
Limestone.

Shale
(black, red)

Found return to Iowa City
was so muddy (water all
over) that I could do
nothing.
Left Des Moines at 11:25 AM.

From Des Moines to Van Meter
the Wisconsin morainic is
distinct, and just N. of the
C.R.I. & P. R.R. + of the river.
At De Soto we ran into
rough country, - some rocks.
Some distance W. of De Soto
the moraine crosses track &
follows small of R.R. to Dexter.
Northward there is a flat
plain, - Wisconsin.
At Stuart the moraine is
a little farther south from
R.R. & flat plain north.
At Menlo much the same

Just beyond Mendo we ran into rougher country & some cuts ahead.
At Casey quite rough, some timber, & some, mostly overgrown, cuts.
Between Casey & Adair there is rough Kansan topography. Cuts shallow but one or two deep.
Big ant hr. of Adair shows yellow drift. Another cut shows drift almost to top.
Rolling Kansan & Atlantic & thence to C. Bluffs
Reach C. Bluff at 4.15 Pm.
Left at 4.45 Pm. by C & NW.
for Nishna Valley.
The bluffs E. of RR show brown (dead grass) & yellow

surface on W & S. sides
1 slopes & ridges, but
protected sides seem to be
quite green.
The bottomlands are nearly
dry —
Reached Nishna Valley
at 5.40 Pm. & put up at
the Miller Hotel

Aug. 10 — (Mon.)

Spent early forenoon in
arranging rocks and material

Mr. J. S. Wattles, C. E.
city engineer of
Sac. valley.

Blair bridge bed rock is
45 to 50 feet below low
water, dips to W. about
5 ft. (in river bed)
Solid limestone, - hard gray

Wells for city:

Drive wells. 6 wells - 4½ pipe
60 & 85 f/t.
Clogged soon.
Water pumped in Cork wells
(by hydraulic power) -
80 & 90 f/t - 4 wells.
2 pumps - combined daily
1 - capacity 1,500,000 gals
1 " 750,000 "

The RR. wells (4) are about
90 ft. deep. Hard rock

Analysis of water; C. V. U. U. chemist
Geo. M. Davidson, Chicago chemist C. V. U. W
RR. wells.

	Old well Cork	Water works.	Lake Michigan
Raw waters contain of solid matter in grains as follows:	33.68	31.12	26.61	7.78
Lime combined: (grains per gallon)				
Carb. of lime	17.50	16.35	14.54	4.46
" " magnesia	10.17	5.69	9.24	2.20
Sulphate of lime	Trace	— —	Trace.	0.30
" " magnesia	27.67	3.78	23.78	6.96
A oxide of iron & alumina	Trace	0.15.	Trace	0.02
Silica	1.26	1.31	1.64	0.30
B alkali chlorides	1.30	1.63	0.86	0.22
B alkali sulphates	3.45	1.32	0.33	0.28

A = incrusting solids
B = non- " "

Pounds incrusting solids per gal.: RR 4.13
" " " " " (Cook) " 3.90
" " " " " (Waterworks) 3.63
" " " " " (Lake Mich.) 1.04

Comparative Readings.

Water from:

Long Pine, Neb. 3° of Garden
Well at Niobrara Valley - 25°-35° "
Waterworks " 11° "

Test made at High School
Neb., Niobrara Valley Jn
by E. N. Coleman
Supt
December 1892.

About 20 yrs ago, out
Bonesteel, in Dakota
co. dug for coal.
At 60 ft struck Niobrara
Valley. Tradition has it
that they found through
6 feet of good coal ("like
Des Moines Valley coal").

In afternoon walked out
to ridge above Schneider's
Hollow (beyond city reservoir)
and selected Conclin for
evaporation, etc., observations.
Took barometric readings, and
checked back at Hotel. The
difference in the returns being
less than 5 ft.

W. side Miller Hotel (about = 8
C. & NW. about) = 0,
Top of reservoir hill — 195+

I went N. on 5th st., from
hotel, and near top of ridge
followed road N. and West.

In evening met
Kirkwood, who is Cashier
a visit. Live at Long
Pine, Neb.

18 aug. 11 - 1908. (Div nothing rains)

Pans.	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7
1															
2															
3															
4															
Piche															
1															
2															
Cup.															
1															
2															

Aug. 11, 1908 (Tuesday)

Got up at 4 o'clock, expecting to make evaporation observations. It was raining, and rained all day, so that I could not get out.

Letter apparatus, copied old Hanson Co. notes, made blanks for observation records, looked up plants, etc, etc.

A busy, indoor, day.

In evening wrote letters, etc.

Aug. 12, 1908 (Wed.)

Left at 8:45 A.M. for Logan, as it was raining.

Spent day until 5:30 P.M. at auditor's office making Maps.

Walked up the canon back, from Michigan & cemetery.

The cemetery is located N. of town (not far from R.R.) on a ridge which slopes eastward to the right of way. This slope is covered with a typical Juniper flora. collected most of the plants, but recorded following, some of which are not in set, - they were new and old: (I do not include here).

Verbena stricta
Vernonia noveboracensis
carex eburnea
✓ Rhus glabra
Kuhnia eupatoides
Lespedeza capitata
Petalostemon candidum
" violaceum
Bouteloua racemosa
Equisetum hyemale
✓ Asclepias syriaca
✓ Cannabis sativa

Ambrosia canescens.
Euphorbia corollata
✓ Psoralea argophylla
✓ Helianthus grosseserratus
✓ Liatris punctata
✓ Verbena hastata
✓ Delphinium azureum
etc. etc.
(See plants)

along the Boyer, in low bottom
I found some herbs (see Herb.)
and the following native trees:

Salix amygdaloides - Cynomelanchia
" nuttallii Ulmus americana
" florida Salix nigra
Catalpa
Green ash
Box Elder
also some cult. trees.

On the streets, alongroads, &c.
I found the following weeds (see
also specimen of same);

Datura stramonium, not c.
Brassica nigra com.
Lactuca scariola com.
Panicum capillare com.
Chenopodium hybridum com.
" album v. com.
Cannabis sativa com
Ambrosia trifida v. com
Iva xanthifolia com
Polygonum aviculare v. com
" (Persicaria) com
" pennsylvanicum com,
Lepidium ruderale v. com.
Ambrosia artemisiifolia com.
Lepidium virginicum com

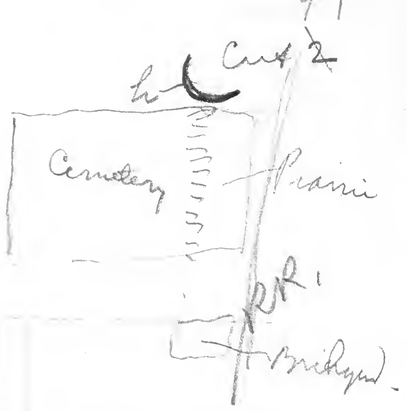
Abutilon darkeni, not com
Xanthium purple stem not c.
Melilotus alba not com
Marrubium vulgare frequent
Arctium lyppa frequent
Tribulus terrestris com
Solanum nigrum v. com.
Helianthus annuus v. com
Sonchus (round leaf) frequent
Plantago virginica com
Amaranthus retroflexus com.
" albus not c.
Daucus carota com!
Physalis v. com.
Polygonum (Persic) com.

Panicum (Texas variety) com,
" capillare not com.
Trifolium arvense v. com.
Nepeta cataria com.
Hordeum pusillum com.
Cenchrus tribuloides not com.
Euphorbia (maculata) com.
Rumex crispus (not com
Salsola kali (not com)
Chicorium Intybus (rare)

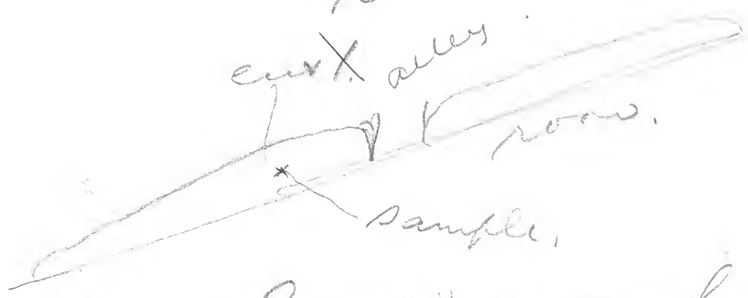
Also noticed the following cultivated
trees on streets & lawns:

Scotch Pine few
Box Elder v. com.
Am Elm com.
Green ash com.
Catalpa frequent
Peach some
Norway Spruce a few
Mulberry one
Sugar Maple com,
Plane. by sidewalk
Maple.
Black cherry one.
Hard Maple (few)
Arbor Vitæ few.

Later some
Spruce &
Pine



Going N. from depot, up a good rise
hill, about ½ way up, 1 from cut X. 96



This shows 3½ feet loam, more
or less reddish, loose & soft, with
a few nodules, and yields a number
of shells (see spec.).
Took a sample at x, where
bank is about 7 ft. high, x
x is about 3½ ft. below surface.
Cut 97 2 is just N.E. of west part
of cemetery, on N. of prairie
slope, and is a curved bank
of irregular height, made by
excavation of clay for brick.
(This year they are making
cement brick & blocks, & have
not burned brick.)
The loess in cut 97 2 is somewhat

soft, friable, with few small nodules, and some fossils (see ~~at~~).
Took sample 8 ft. below surface
Towards S.E. end.
Fossils are mostly from N.W. end,
but others all along.
The land is highest at N., & is
here about 15 ft. high.

Went out at 4.30 a.m. and
set up frame, etc.

I. Evaporating pan no. 1, Prairie pan no. 1,
~~the~~, windmill anemometer and
cup evaporimeter no. 1. are on
the bare slope facing west,
and are about 60 5-5 feet
below top of reservoir hill. Or 140 5-5 above 2d ft.
This is area 1 in my plant notes,
see p. 31.

II. Evaporating pan 2, Prairie 2, and
cup evaporimeter 2. are set up
just over the ridge east, at same
height, in scant timber, but
well sheltered. See p. 31.
The N.W. winds of afternoon (when in
fact none are found) I & II are separated by "Cooler strip" about 2 rods wide.

This is area 2 in my plant notes.

III. On a point jutting out west, & lying S. W. of area 1, set up
evaporating pan, no. 3. This is
about 170 ft. above datum, & faces
south & west.

IV- Just over the ridge E, and on a field which was formly timbered, set up evaporating pan no 4 at same altitude as no 3. (This is the "old 4". At next reading I moved this to a point at same elevation in Jackson orchard (few small trees, - no pans in them) (see p.

There was quite a heavy dew in the morning,

It should be remembered that day before yesterday it rained all day, + that yesterday morning it was too wet to go to the field!

Was been stay except to turn up amounts at 9.45 am, but it rained in pans, by fits + starts

Pan no	
	1042
	1040
no 3	1018
	1035
	1032
no 4	1016
	1030
	1029
	1030
old	1005

- Photo 1- (Shirley)
- " 2- Looking S. at area 1- see annotation
- " 5- Same
- " 6- Looking N from pt. to area 1-

× area 1, Same.

- " 7- Same
- " 8- Looking N.W. across [illegible]

" 3 Looking N.E. into [illegible]
" 4 Looking Tolumidas Below.

Aug. 13.

Wind

1 - 12.30 - 12.45		3220 - 3500	NW
2 - 12.30 - 12.45		640 ft.	"
2 - 12.54 - 12.59		428 ft	"
1 - 1.02 - 1.07		815 ft	"
3 - 2.05 - 2.10		2030 ft - from mt.	
4 - 1.55 - 2.00		462 ft - from Alt. down Below.	

Took one reading with Brunton Pocket Transit at each of 4 stations; at 2 PM

	Dip	Direct
No. 1 -	83	71
" 2 -	81	71
" 3 -	84	71
" 4 -	83½	71.
On top of ridge W. of 4 -	85.	71.

Wind mild at noon.

676.2 miles

Plants in area 1.

(see p. 61-2)

At 5 PM. velo. of wind

no. 2 4.48 – 4.53 — 190 ft

[illegible] from N. of the [illegible]

no. 1 4.52 5.01 — 970 ft.

It is hazy [illegible], and the wind is almost NE, [illegible] [illegible] [illegible] [illegible]

At 5 PM took Green psychom.

reading	dry	wet
1 -	84½	73
2 -	79	71
3	84½	72½
4 -	81	71

Practically no wind.

[illegible] 81 - 71

At 7.30 PM Green

1	72	69
2 -	73	69
3 -	75	68 - E. wind
4 -	75	68 - E. wind.

The day was more or less hazy, especially afternoon and early in the morning. There was little wind and that came mostly by fits, – first from NW, – then west. Snyder's Hollow brought some. It died down in latter part of afternoon, + during middle of P.M. the plants at the west border of area (2) were wilted + drooping.

The woods are peculiar (in area 2) because no leaf mulch + few small plants. (Has this been pastured recently? – i.e. – in recent years?)

At about 7.45 PM the East wind started up, + effect on psychrometer was noticeable.

although not much wind I could see some clouds of dust in the Blair Sandune Territory. Some flint chips, pebbles, & fragments of clams on top of ridge. I could also make out at least one mound, (See N.E.)

Readings of pyranometer taken mostly about 1 ft. - or less - Pitchers were about 8 in. cups - burning to cork. Pans on level of surface - burning.

Pan II was probably a little full - on account of worm mark, perhaps 40 cc. Should be added to reading at first reading of cup evap. I drew what appeared to be slight lead - hence large reading. I stopped it for next setting.

Aug. 14 - Friday.

Went out at 5.45 a.m. Was cloudy, with wind from E., at first with occasional raindrops. at 7.15 commenced to rain hard, - got a good soaking on my way back to tent. There was no dew.

The chiefly noteworthy facts to be taken in connection with observations are as follows:

Pan 4 was emitting exposed to the lamp(?) E. wind, which evidently blew all night.

Pan 3, though on west side, was in situation on the S. side of a projecting ridge that it caught the wind much stronger than any other pan.

No 1 green reading was taken dry, but it was covered & sprinkle before 2, 3, & 4 were taken. I could not try actual psych. as it was getting too much like rain. All observations taken 1 & 1½ ft above surface (except pans), & cups.

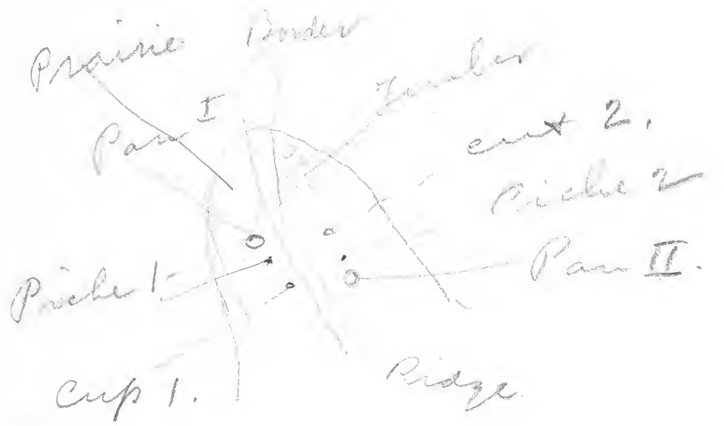
30 and Pueblo which were less than 1 ft.
On the way up I took following
barometric readings:

Walk in front of Hidden Hotel	0.
go north on 5th. Street at foot of hill	12(15)
Superior st (1st climb)	55
E. Michigan (2nd ")	90
W. Main st	175 120
Linn[?] (a little S. of street) (about 2 blocks)	190
1 blk. west -	175 160
1 " north -	185 190
1 " N.W. - (top of rise)	195
1 " N. = end of st.	

I also took instrumental:

no.1 Piche is 7 ft. S of pan I + on same "east-step". No.1 cup evaporimeter is 10 ft. 10 in further S, - the line of instruments showing a little to southward.

no.2 Piche is 6 ft. 8 in. W. of pan II. Cup 2 is 10 ft. 4 in. W. of pan II



2 ft is 20 ft. (around on curve at level) to W. edge of timber. The border (mixed prairie & forest) is about 25 ft. wide. Pan II is back E., 48 ft. from E. side of timber area. This is all on a level. Really the ridge between Pan I & II is merely elevation above Pan II, but latter is "around the corner."

31

Rained, and I got a good wetting.
Went to Logan and worked at
Court House. In evening went out
& did grasses, and noted additional
trees in flat: Cynoglossum, Black willow,
Am. elm, Ailanthus & Ulm. Valley
at 10:30 P.M.

Aug. 15 - (Saturday)

Rained in morning. Pressed plants
& wrote.
In afternoon went on hill. Again
took Aneroid readings

Walk at hillcrest (= CNW. depot)	0
2nd hill north - (foot of hill)	15
Summit rise (1st climb)	55
" (2nd ")	90
" (3rd ")	118
at 1st turn W -	145
" " N -	175
" " W (SW) -	185
" " N	168
" " NW	178
Foot - the descent	188.

[illegible] (3 times)
[illegible] 3:30 P.M.
[illegible] 2nd climb
[illegible] summit
[illegible] 2nd descent
[illegible] 70 99 58 91 [illegible]
at Erie NW 2nd NE
-15 -10

Visited Smiths Crickyard list, &
found two leaves - Received for
fuller examination
Saw nine box of grain plants
Set taken.
Interview Rev. D.H. Swift, editor of
the Daily News.

Sunday, Aug. 16.

Rain all. Packed plants, wrote letters, & at 11.30 left for Omaha. (Skipped brunch of plants Brent & Brunetti, - from Vantas has gone to Chicago.

In the afternoon went out with Cinni & station a 4 & a mile above water works at Florence, & fixed station on ridge, 100 yd. (barometer) down road, & at edge of clearing, - only recently cleared by water Co.

This is at Mr. — bungalow. He is a member of library board with Frank Waller. At first Gertie & intruder, but in evening - first of visit, was very kind.

The bluff line faces a little S. E. & is heavily wooded, but there is a clearing near top, & at Mr. corner of this I set up cup & Pike anemometer

Very hot.
Hanna & Fairmont Bank, ✓
above (NE) of 10th Ave, entrance
at 100 ft. alt. I set up
instruments (Aneroid ✓ Cup anem.)
✓ took readings. (See sheet).
Returned to Brooks in
evening.

Monday, Aug. 17.

It was stormy ✓ thundery
all night, but no rain.
Night was very sultry, but
town moving & grow
new. wind next AM. At
11 PM midnight it was cloudy, a
rumble (Took readings, see sheet)
I changed the station to the
same level a way ✓ ridge
north, opposite middle Salem
pk ✓ the cross. This proved
not same, ✓ in the last expand

point in each rank.
I noticed that instrument at
my tent night was under a
little bank S., - hence out of
free unsteady wind.
Evaporation was slight. There
was very little dew, - almost
none, except — town place.
My new station is on top of
dune, exposed to both winds.
It is 140 ft above flat, but
/50 ft above shelf on which
are tents, residence, the
Museum, this being further
down stream where be a
little safer.
The new station is 70 ft higher,
at top of ridge, of which the middle
main station is a spur.
The 3rd station is just over the
ridge (east) 2 rods from top, and 6 ft.
below it. Scant timber here.
The 4th station is at top of main ridge
at angle of rows in NW. cor. of the grove
✓ is 25 ft above No. 3, or 235 ft. above
flat.

Plants on prairie ridges & slopes – W. side (& top) of Fairmount Park Bluffs.

Helianthus rigidus
Amorpha canescens
Petalostemum candida
" violacea
Cassia Chamaecrista
Dalea (beautiful)
Ceanothus
Liatris squarrosa
" spicata
Lygodesmia juncea
Andropogon furcatus
Grass (sharp - see notebook)
Elymus (long one)
Melilotus alba
Solidago lanceolata
Bouteloua racemosa
Galium boreale
Aster [illegible]
" [illegible]
" multiflorus
Salix humilis
Quercus macrocarpa
Ulmus glabra
Comandra umbellata
Verbena stricta
Erigeron
[illegible] canadensis
Aster sericeus

Solidago nemoralis } see Mo. Valley Bluff
" rigida }
Astragalus (gray, hoary)
" smooth – (caryocarpus ?)
Castilleia sessiliflora
Euphorbia marginata
" corollata
" [illegible] (in valley)
Pentstemon [illegible]
[illegible]
Onosmodium –
Amorpha –
Vernonia [illegible]
[illegible]
Kuhnia eupatorioides
Rosa [illegible]
Populus
[illegible]
Anemone cylindrica
Muhlenbergia [illegible]
Desmodium canadense
Lespedeza capitata (but smooth, [illegible])
Chrysopsis –
[illegible]

Readings at stations — Grevis Ryph.

Hour	2 ~~700~~ ft above station Dry	Wet	5 ~~ft~~ 95 ~~ft~~ ft above station Dry	Wet	3 In woods 2 rods E. 6 ft above top of ridge Dry	Wet	4 In woods 180 ft E. 20 ft lower than top of ridge Dry	Wet	6 Near ridge E. of station Dry	Wet
9. ~~10~~	71	62	74	64	70	61	69½	61½		
9.	71	62	72	62						
10	78	67	76	64	73	61	73	61		
11	80	64	80 at 12.20	65	75	64	76	63		
12	81	66	81	66	76	62	74	66	78	66
{6 ft above top of ridge Dry		Wet			78	66	(at 1		80-67	
1	82	64	82	66	78	63	76	61	80,	67.
2	82	66	85	70	78	62	76	62	82,	67
3	79	66	77	66	76,	64	75	62	76	65
4	76	65	77	66	76	64	74	64	78	67
5	76	66	79	67	75	64	74	64	78	67
6	77	66	75	64	74	64	74	63	75½	64
7	70	62	79		71	62	71	62	71	62

At 10ʰ 6ᵐ – 10ʰ 31ᵐ Tel. from 1180 ft. at station 6 ft below top of E. of ridge in woods –

At 12ʰ 6ᵐ – 1850 same station

At (over the hill in woods) 1665 – 12ʰ 14ᵐ – 12ʰ 19ᵐ

Very top of ridge above reservoir, 1 mile W. of ~~Fairmount~~ Fairmount ~~Park~~ 77 – 67 at 1.30 p.m.

Sketch of top of hill 1 mile W. of Fairmount

at 12:30, when sky was cloudy, I
took my focus in mind
at room 78-63
I then turned to next page.
in shade of my body & me
not back mind & 65
78-65 was looking
at station 5 - valley
$2^{22} \cdot 27 = 510$ ft.
Bridge - other bank.

- Photo 9 - looking to room
  - Come Walk
- Photo 10 - looking S. into
  Tennessee Park,
  both interior trails
  view
- Photo 11 Left & of S. from main
  station
- Photo 12 - looking N. up E. arm
  of pinnacle parking.

aug. 17, 1908

Photo 13 & 14
out at end of station ridge
on 9th ave.
Stony trail of large boulders
& Photo 15 & 16
looking S. out —

middle
ground

X

17 & 18
from view of parking
at X

Next wind mark 8
more. The leaves at
no. 3, also 2, though
latter gets wider quickly.

In the cut just below my
station the bark is a
very pronounced yellow marked
the whole of which, dwelling
downward with
other flow, was part of cut on
the very first day I was
[illegible] to explore. Leaves
are very thick & leathery (see by)
The middle layer contains the
largest vessels but I have no
[illegible] as Prunus.

Aug. 16, Tuesday.

Left Camino Alto at 7.50
a.m. for Cosumnes Valley.

46

Zinc well — by Claude Cox.

Pit on N side.

Just enough rock (about 300 yds S, ½ of hill) to have where well stands.

40. { Black soil 2 or 3 ft
Blue joint clay

87 { Sand mixed (heavy) & fine
Sand
Gravel

Total depth 87.

water in gravel.

The bones are all in gravel.

Also fragments of bone in same gravel.

The well is 55 ft. above the mouth of [illegible]

Was dug by men of P. R. Cox, father of Claude Cox.

47

Pit (McGowan) - S 8

Water is 22 ft. (Dec 1st RR is 6 ft above datum.)

Pit about same + gravel mostly sand, with fossil [illegible]

Sand

Carbon [illegible] clay

with [illegible]

No bone.

Cut 18 ft [illegible]

Aug. 19, Wed.

In AM. packed and looked up notes.

In afternoon took barometric readings on the east ridge and E side of middle ridge, they checked perfectly on the return and I let them stand. Also checked with other readings on 5th. See maps for town in Bend of road. The mill is just S of the mill [illegible] on a datum line, This is really north as C. & N.W. depot.

I also found two cartridges and one C in S end of middle ridge. The unusual number of cuts in Mo. Valley makes this a fine find.

went SE with Lewis Pennock Staples at small pit (Cut) + got a piece of clam + bone. Visited the Dutch pit just S found, but found 4 shells. Report has it that many bones were found here.

Cut 67 is a low cut with gutter only 4 - 6 ft. high + below upper 2 - 4 ft. visible gravel, but without iron tubes + contains fine [illegible] materials) The bone + more compact, flint cut + stained + with few rodents + a few very fragile shells. Burning below mostly + fragments of Succinea (in bone)

Tooth + few rodents + rarely + clay about 5 ft from top.

No 68 is a similar section with small fragments of [illegible] + [illegible] yellow.

Iron not over 1 ft deep + not long, + not more than

The road here gradually runs up slope, so that 68 is higher than 67.

Cut 69 is on hill sloping up S.E.

a) is upper 3–5 feet, which is yellow sandy, & with many little nodules. Also a few large concretions, etc. (see Plan.) also samples & notebook. Sample 3 ft. from top

b) Is more sandy, less. It is chiefly yellow, but on plan is blank with few black & chocolate lines of it.

At base fossils occur very thinly & also a limited quantity of rounded nodules. See sketch, notebook & samples. Sample 6 from bottom, about where bones are most numerous.

The total depth of cut is about 10 ft. & nearly three reclining depths long.

Cut 70 - is similar, but only about 6 ft. deep, & the

cut 71 is in hillside on summit (nw.) about 8 ft. of cutting here with red clay & bones. (like samples from cut 69a) is exposed in a bank, back cut NW side of road.

In hillside gutter to NW side a blue line with white Tuberculina & red sand lines is exposed (see sample 71 b)

A little cut not deep (at top) leading up from hill E. shows blue lines & Tuberculina part way up it is cut out, & the road. The layer of bones I could not make out here, but 69 b seems to be a thinning down as it is upon south of road Kansan.

No. 72 is at foot of hill (to E. ow)
where about 6 ft of yellow
loam & the = of 69a. Underlie
a red compact blue loam,
with a dark chocolate vein
loam, interruptin & irregular,
& why an outlier to block

No 73 is a deep new cut,
15 ft deep, having cut
across a narrow ridge.
The lower part of bank is
about same width from Rockdale
& some forms section of
stream. See sample 73 a)
24 - Loam light with chocolate
tinge & pebbles in streaks -
underlain by (b and c)
in part typical Blue loam.

The upper layer of 3-5 ft
is crumbly, reddish, & shades
into 73 b Remainder

modern when in cut bank

No 74 is near foot of hill just
E. of 73 & in a washout 4 of
road about 12 ft. deep
It shows in bank of a
very compact loam (see sample
74) & this is shown with
iron & shows it.

This is Prudhon's
On west
(In sec 20 of Magnolia
dry well bank mud
2 ft
20 yellow clay.
40 Blue clay
10 ft. sandy - & dark
blue clay -
here 70 ft. dry -
at 40 ft. a seep. & the
dry to 70 ft. -
a little water ft. above
yet ft - on west ridge -
2 - black mud
20 yellow clay
40 - Blue clay
Hardpan. -
30 ft
Brown below & same.

In bare boulder-strewn country as you leave. Black niggerhead & mine refuse.

Looking E from Beckstown & sees rolling plain, most cultivated with Potato ridges & the smoke of fields. Good timber & bare.

Lt is mostly rolling plain country with some ridges & Potatoes & the timber in patches.

S.W. part of county is rough rolling land & rises right up to the limit of county.

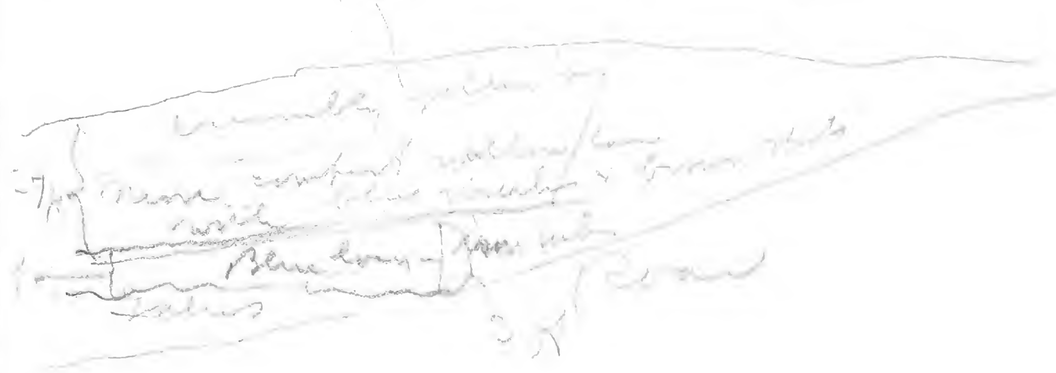
The O.R.S. road valley makes a little north part of it but a broad valley, has very little timber

skirting it in Sept 5. just E of Beckstown on L road & Road in centre & valley grove.

Cut 75 Blue boss with numerous Tubules show in cut many entrances & passages.

Cut 76 in new line of hills rises & extends to S.E. & East side of it is as follows:

(c) (b)



The Blue-boss (a) is capped with white calcareous patches, small nodules.

The whole boss - like capped boss is of mottled yellow & grey type seen in 73. [see sample

Ast 77 The road with [illegible]
down present Long Hill,
passes over a [illegible] just
S. of canal, & then the road, as
shown at left (Town to) Then is
a considerable amount of known
burial as used (See plan 82)

and 78 is N. slope, leading
down from top of first ridge
S. of creek

Ast is 4-6 ft deep &
the lower part = grayish
like unit 73, & the
part = mostly yellow, with
[illegible] as before.
Very few from lower
part of mostly [illegible] &
part is [illegible] with
lower [illegible] See box.

Unit 79

This is on top & N. slope of
last hill before turn
St reaches 7 ft in depth &
is just like 78. Zones
are in [illegible] of upper &
other part of Town
Lower has rounded nodules
as before. Upper, small ones
as before.

Ast 80 same zone as

80
=
"1179

12 ft. deep - Same = 73
Few bits from lower part.
Known nodules below (few)
Small nodules (few).

Cut 81 - is in first rather small
slope E. of creek. It shows
[illegible] blue-black [illegible] 1.6 ft.
[illegible] & [illegible], & smaller
pebbles [illegible] Kansan [illegible].
Part way up the slope a red
[illegible] shows, [illegible] up
into a reddish clay (Loveland) All
Kansan drift. On top there
is [illegible] all.

Cut 82 - Shows blue [illegible]
[illegible]
[illegible] upper
part, [illegible] (a little)
above
[illegible] clay [illegible]
[illegible].

Cut 83 - [illegible] clay,
yellow above
fragments of [illegible]
[illegible] near creek.

Cut 84 on slope facing W.
Like others - yellow, small
[illegible]
Larger [illegible]
[illegible]

Cut 85 is on slope from E. & [illegible] to
top of hill
Similar [illegible]
Saw few fragments of [illegible]
Also [illegible] from [illegible]
[illegible]
[illegible]

The topography of vicinity S.
& S.E. & E. of Mo. Valley is
good Kansan.
S. E. of Mo Valley it is rougher
towards bluffs, and E. & NE.
from Beebetown, where I came
in, for miles it is somewhat
more gently rolling Kansan (a
fine view for 8-10 (?) miles), broken
by the rather narrow valley of
Potato creek, along the banks of
which are lines & clumps of
trees.

Groves of some size (now interrupted by clearing) occur in sec. ~~17~~, 24 & 25
T. 78. R. 44 & 19 R. 43
N. of Buckdoin in sec. 14, 11, 1, 2, & the topography is very rough, especially along Harris Grove Creek, and there is ~~a~~ considerable amount of heavy timber. In places, especially S-turned bends, even with deep woods are free from undergrowth & leafmould), – a peculiar condition described also at stat. 1, Mo. Valley. (see pp. 61 & 62)
There is, however, characteristic deeper woods near the creek.

Aug. 21 – Friday.

The day was hazy & cloudy with thin clouds, in there a slight shadow [illegible] part of the time. Only occasionally did the sun break out.
At stations 2 & 4 there was very little wind, mostly puffs.
There was a rather heavy dew in the morning.
The deeper woods are bare like those on yesterday's trip, the few and scattered timber plants [illegible] [illegible] seedlings [illegible]:

- Eupatorium ageratoides — see p. 25
- Chenopodium album
- Viola cucullata
- Symphoricarpos
- Young elms, elm
- Ampelopsis quinquefolia
- Laportea can.

62 There. Love words near & often where the wind enters
The trees are there already
Add butternut walnut & Cucumber
I took photos of these
Love grows words.
Nov. 19 & 20 & 26 & 27.
Each has reference a
different view.

Aug. 22 - 1908 Sat. 63

Packed & arranged material
At 2 PM left for Cowichan
and boarded N.
Wind Northerly & cool &
raining (broken up
afternoon Am Temp.
53° F.)

Aug. 23 - Sunday
Rained all Am. Cloudy
Still
Spoke at 3 PM Mrs
Young's office.
Mrs Victoria is a Young
Spirit Young Portland
Known as President & Etc.

A. Khaney gave me name &
John Kinsella
W. 4th Ave —
Jos. Unrich
1409 Eaton Ave

Aug. 24. Monday

Hard day at Omaha,
Got my permit from U.P. & Bolle
to dig for Bison [illegible] &
back & [illegible] [illegible]
on account of [illegible] [illegible]
got [illegible]
Drizzly [illegible] [illegible] of [illegible]
Saw [illegible] species (cult) at [illegible]
[illegible] [illegible] 5 & [illegible]
[illegible] [illegible] were a
dangerous [illegible].

✓✓ Photo 23-24 - looking [illegible]
[illegible] [illegible] [illegible])
from bridge [illegible]
see 26 -

✓✓ Photo 25-26 looking up Mo. riv.
from [illegible] Meadale (in Neb.)
25 snap. 26 time

✓✓ Photo 27-28. 27 snap
showing small Salix fluviatilis
Between 12 & 13 in. on N. side Mason in drift
below 30 ft. of [illegible],

Mr. R. L. Huntley, chief eng., U.P. R.R.
Geo. Pelsruppe B & M

Aug. 25 1908 Tuesday

Cloudy - S. wind
Drove out to Meadale, the
Plants on bottom land same
as those on dry hills.

Carex capillaris
Euphorbia marginata.
Ambrosia [illegible]
Asclepias verticillata
Petalostemum violaceum
Artemisia gnaphalodes
Lespedeza capitata
Setaria viridis
Verbena stricta
Andropogon furcatus

Trees on Carlton Avenue

Native

Sugar Maple
Red Maple
Silver Maple
Red Elm
White Ash
Basswood
Sycamore
Kentucky Coffee Bean
Catalpa
American Linden
American Elm
Slippery Elm
Cherry Bark Oak
Pin Oak
Red Oak
Black Oak
Shingle Oak
Scarlet Oak
Chestnut Oak
Yellow Poplar
Sassafras
Persimmon
Black Walnut
Shagbark Hickory

Exotic

Norway Maple
Horse Chestnut

Plots 2 & 3 - Sidney Smith Centennial Park

Plots 5-6 - Same area with Carpinus & Ulmus varieties

Plots 7-8 - Same & park

Aug. 26 - Wednesday

J. C. Prather - work days

Started work at Little Sinnemahoning

S. 1 Sam - 1 mi - Blo sand

3 coals - 135 - 137 ft. - Coal

on the Run

(Mid Valley)

about 2 miles to mouth

mouth 172 ft. - Hands all

day.

Aug 27 Thursday Sand of

Sandstone

172 ft. coal - 4 Slates

If coal 3 ft. = 210.

Began to get pillars 2

in each at 150 - 175

At Vein 19 Sam E - in

Mine working in 3 slope

3-6 - Coal - 144 ft

Length of work from Sam to be

like from Sam to be

Rock on about Sam in Length

3 by 9 19

At farm Sam

At 180 about Three ft

coal

1st Coal (Main) and

at 180 - about 3 ft.

2nd at 250

about 3 ft

Sept and.

Two feet above at

Two feet Coal

Next 20 Sam Shale

Sand (Mine Sam)

144 ft

Sam

Coal 3 ft about 6 ft -

Sam about 3 mile -

Coal 3 ft

Second Coal

about 2 ft. and

to 324 ft. - (the

Next Coal is 20

Fossils upon

Alluvial sandy layer (perhaps
at 140–150 ft)

On N side of Bryan Run
a sand layer (up 20 ft above
Peter Cave level at gravel
pit)
upper clay - 70–72 ft
sandy zone - 35 ft. below
water from surface

4–5 ft. fresh water

Hanson 50 60 ft ±
Cooper - Sam Powell

Ice - Tuscarawas -
Illinois
Wisconsin - 3 -
Mississippi -
Ohio
Pittsburgh
Cleveland
Akron - 1–2 -
Ravenna - Sandusky
Findlay - 40 ft 50/7
Red Clay Lowland

a little stuff & coal
1/2 in Coal -
2 mi bdw of Logan
E. B Vaughn's place -
about 200 ft ± -
No rock below -
Yellow clay 170 ft ± thk.

7N Cut 1 in the Mud Valley

Cut 1

— 54 paces —

The [illegible] for 4–5 N is mainly
pale [illegible], with numerous
small angular fragments.
Total sample at 32 m.
The [illegible] are [illegible] and
more rounded in the lower
more rounded layer.
Total sample at 5 N.
Both parts frequently show
lines & flakes of white [illegible]
carbonate.
Some only a few flecks & there
are [illegible] beneath from
[illegible] the above.

Cut 2

73

In cut 2 some
[illegible] (to N end) —
is a soft yellow loam with
few stones, a few [illegible]
iron stains & clinging, &
of clean & clear [illegible]
clayey [illegible]
Nodules are [illegible] with
few loam [illegible].
[illegible] (cut 1)

at 18 ft + upward more firm (either drier, or lower part [illegible] [illegible])
This contains scattered fossils, [illegible] [illegible] than at 20

On W. side within 2 or 3 ft of [illegible] loess brown redder [illegible] [illegible]. It is distinctly [illegible] with [illegible] streaks) in part [illegible] [illegible] which is [illegible] [illegible] [illegible] & brown redder loess. (transition)
See sample of reddish loess
Is this redder only because wetter?
Compare when dry.

Cut 3 - Over ½ blk long - about 22 ft deep. Looking S

Last sample is [illegible] middle 20 ft from top.

Fossils in cut 3 - (mine) taken 4.7 ft from bottom of cut.

This is again yellow, finely laminated [illegible] [illegible], with very few [illegible] nodules & scattered fossils. At X a layer of [illegible] shells - [illegible], 5 in long & ½ wide - Made out only [illegible] This [illegible] not [illegible] [illegible] 3 in. deep.

Cut 4

Looking N.

This is yellow loess [illegible] in (3) & containing fossils & a few nodules. Same deposit, [illegible]
Cuts 3 & 4 show [illegible] of [illegible] nodular [illegible] [illegible].
Nodules in both 3 & 4 [illegible]
2) [illegible] [illegible] [illegible] [illegible] loess-like.

In these & other cuts [illegible] [illegible] in [illegible] [illegible] near top of exposure & [illegible] [illegible] fossil forms in that [illegible].

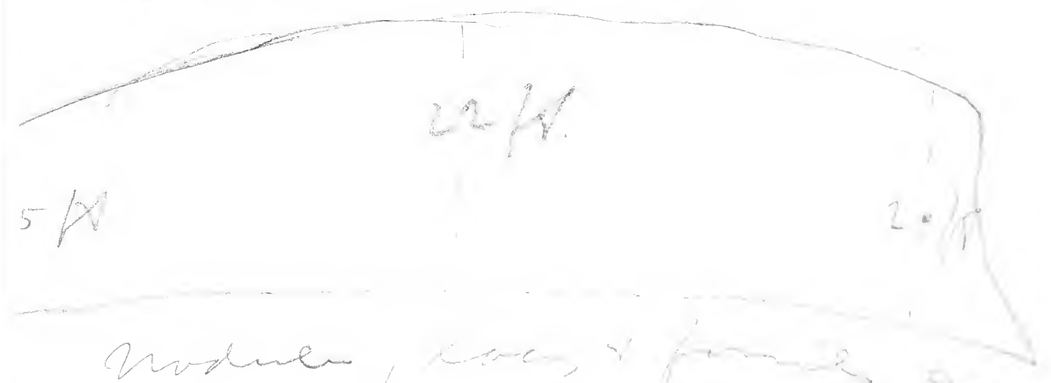
76 cut 5 - Part pair S

the seam / runners are
sewn as in cut 3
Fasten as usually just out of and
in right front, & sew & get
Take in & sew cut & sew
the
Fasten off, & cut seams.

All cut pcs of cut 5 in E &
RS front (in cut) seams & be
sure, & mark as cut 5
facing & mark 15 ft below
in front of front.

cut 6 is a skirt 77
at desired ft. probably
18 ft wide. Gather in
regular scrap at one end
along & 2 rows at both
ends of it. Gather sew
as in 5 sew fronts sew
& place, carefully below,
if plain skirt & mark
seam at waist for
overlap & sew

Cut 7 - Band long.



Gather, sew & finish as
in 5 - Fasten for left
part way of band, & left
front pcs.

Cuts 7 & 8 have long
band marking holes - in upper
1/3 & no -

cut 8

Like cut 7 – about 20 ft deep

Few fossils, mostly shells, Nautilus, Laminaria, etc, like in, as before.

All bare

22 ft. 2 ft

4 ft

cut 9 is more or less vertical, but shows same materials as 7 & 8, only water-rounded logs in a bed a few inches thick, some broken, mostly sound.

See boards from bank & study. Shown in plan (page 2) Its other end (N.) is down & more shingle.

Today House

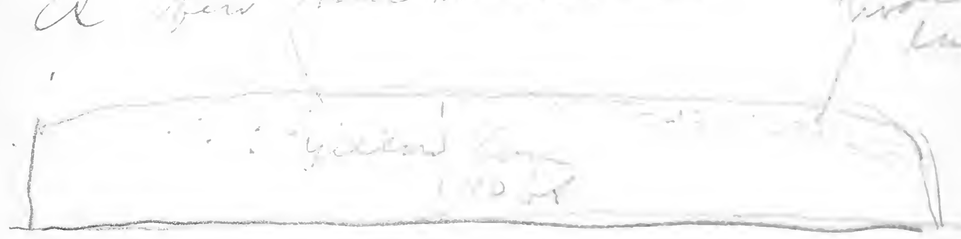
16 ft. Bank

cut 10

This is about 10 ft deep & mostly yellow bare.

½ block long.

A few concretions like yellow bare



The nodules in some parts of bedding are more so as fossils. The nodules bear out of N. and on down. It is 4 or 5 ft down at E. end & runs out & down fast from E. The bare bank nodules (not)

cut 11 is low (6 ft of fast terrace & 2 or 3 of 2nd) & shows nodules like as in 10 – run out. Orange sand & not clean. Handy with fossils in cut 11 some whole black, but E. is low & not good

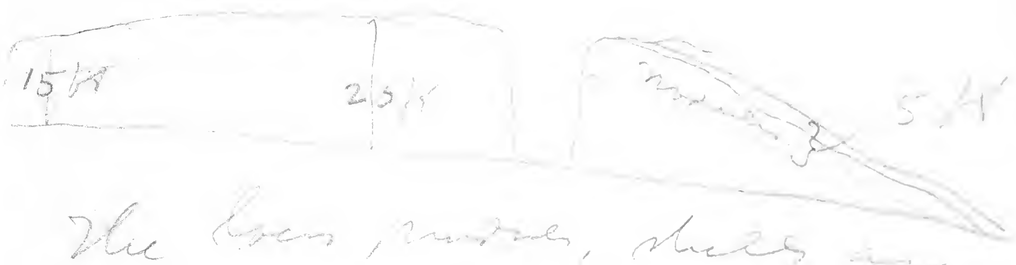
cut 12 is over a block long, & takes down hill to a.

This is like bank of 7, 8, 9 ft.
contains some sandstone,
shales, etc. Does not
make out a distinct
coalseam bands alone but
it is more or less broken.
Ace over this old
workings appear where
if coal was cut in the
formation (mining) the
old adam shows. I
cut no open & again
found this red sandy

at surface. Coal
was visible.

cut 13 - is more or less
slumped, 5-7 ft high,
½ block long. Shows
fragments of shale, sandstone,
coal, etc. as in 11, 12, etc.

cut 14



The bank, rocks, shales are
same as before.
The sandstone bands are
fairly distinct & persist
5 ft. deep. Coal is not seen
in it. Rocks are very
jumbled.
Lower bands will be
worked readily.

This is part of the
excavation by English Heritage
(Come up & take photos)

See sheets.

cut 15 -

Same as cut 14.
See sheets.

cut 16 - ½ Kelling

Kelling - medium layer
3-4 ft with few large
rounded pebbles.

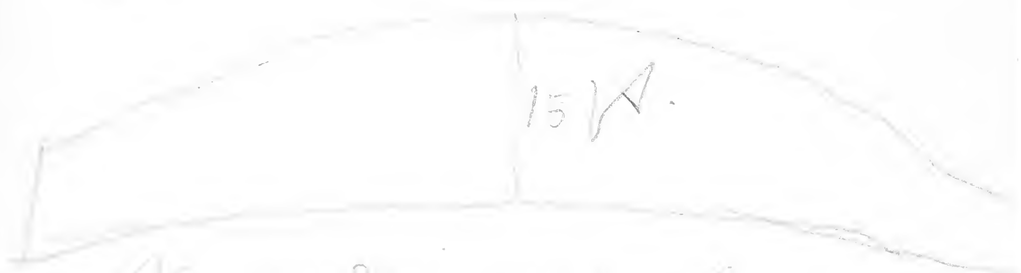
Remainder as in 15 + 14

cut 17 - about 20 ft deep
more or less absolute.
Modern layer less pronounced
especially E & W. ends.
Absent, black layer.

Roman rubble in some
form - Tumble in bays

cut 18 in wind.
Letter (portrait) Copy
not large oblique but
present, as in the blue
a Letter Copy
See study
sketch book.

cut 19



Portrait size Copy
present —
cut same as letter
Study very low

cut 20
½ Life Copy.

Same as Copy —
Negative Copy printed,
but modern pen & pencil.
Round outside one
corner Lower — the
one finished
Lines, etc, in Chin
Shades one corner.
In all this cut
red surface blue
mount!

cut 21

This is a low cut
extending to top of hill.

4 [illegible] rods long

The upper 3-4 ft is distinctly
[illegible]. [illegible] small
& very numerous.
Lower layer yellow loam,
1-2 ft [illegible]. [illegible]
[illegible] visible, [illegible]
of [illegible] [illegible]?

cut 22 - 10 ft deep.

Irregular, slender &
numerous.
Total range of soft
yellow loam 7 ft. from
top.
also - 1½ ft from top
[illegible] [illegible].

Aug. 27 - Thurs.

Went to Cockfield -

The lowest pt - road
a little east of Church
Cocks house = 0.

Road at turn = 5
Entrance to pit = ~~15~~ 17 ft
Top of sand slope = 11 ft

~~0~~ 3,

13 ft

Sand and gravel

24 ft

Loose sand and gravel

Coarse sand.

Gravel

Coarse sandy layer

Dark sand,

Pale grey white sand

4 ft. thin white sand

Coarse sand + gravel

Clay balls + pebbles

14 ft.

The sand is rather fine, distinctly & becomes fully cross-bedded. The other part - all fine sand, with occasional small pebbles (4 in. ch.) It is darker than sand above (more iron) and is sharply cut off. Also rather more strongly cross-bedded for a foot or two,

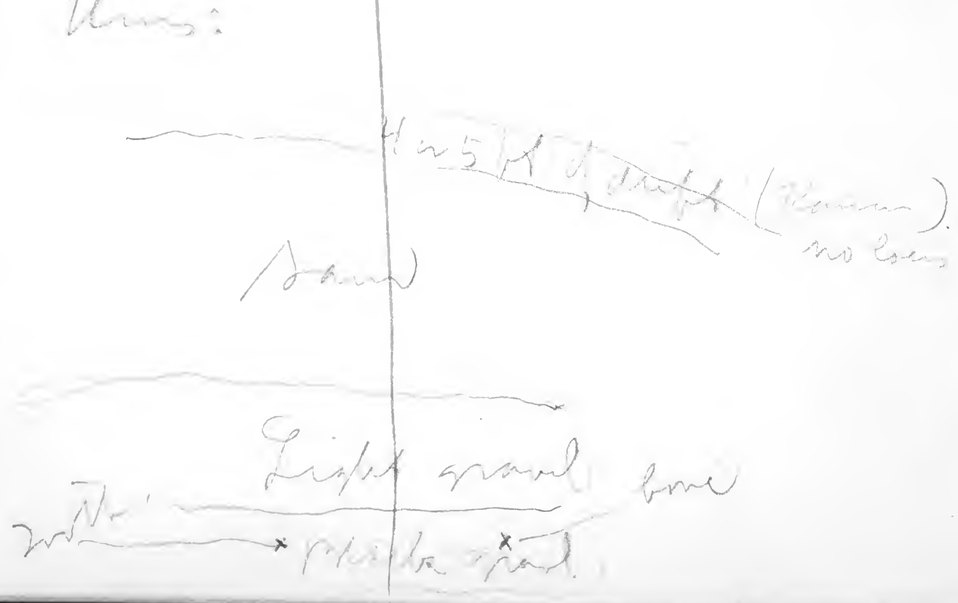
The lower gravel has much flatter dips in places,

9°

Brown and yellow all through both grounds, dec stone came from blue ground, & the ore veins today from light ground.

The manganese & barite & lead was taken from black layer, about 5' ft. above its base. They were of same ground.

The vein on p. 88 is shown dipping E.; dipping E. veins (only these):



The sand is separated from blue earth by a layer of rotten stones, - usually 2-4 inches thick.

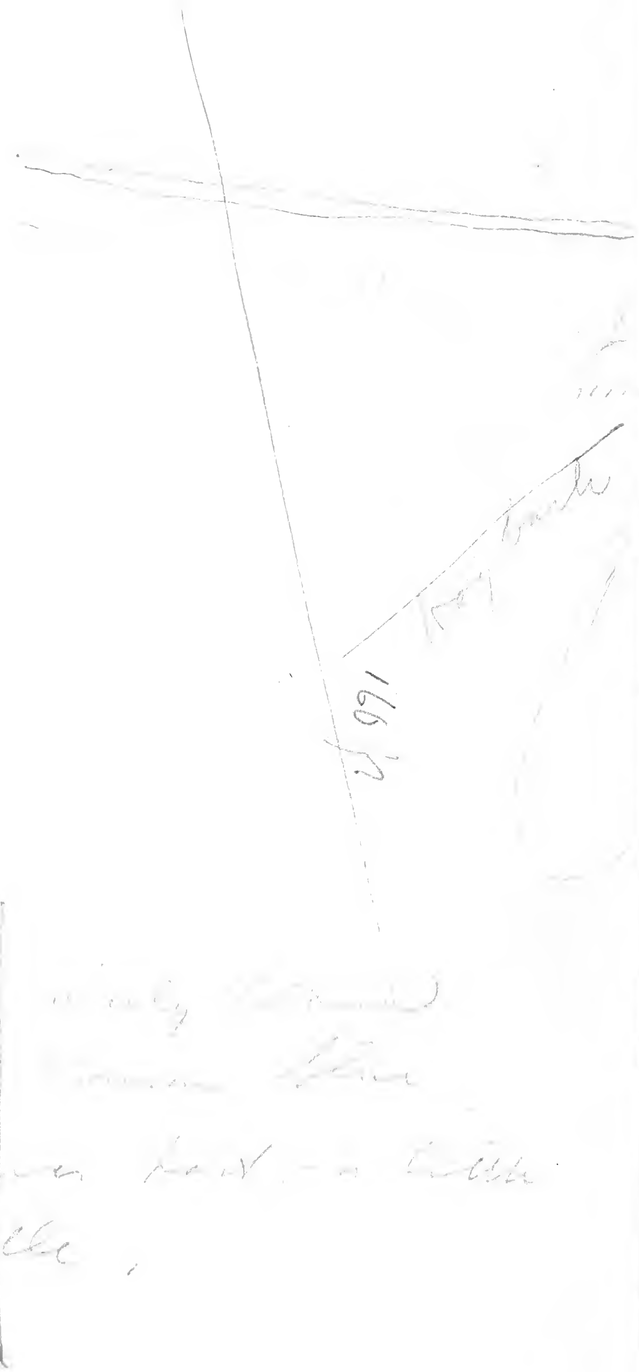
Above this is a layer of blue (some chips, which, towards yellow stone (with rim). The pebbles in the upper part are the most rotten, fine white ones. Pebbles of the Dam

There is a sharply marked layer of sand just at the top of blue in some places.

Row above base ends 5-5 ft.

Lyon begins about 4 ft. row of veins of drill

The mines are to 160 ft above bottom (working = 157



Pit 8 ft. deep, only 4 ft. wide in narrow part. Sand & gravel. Clay 1 ft. from bot. - a little water in middle.

at excavation 105 ft above tide
(Reading = 102)

Well reaches 127 ft. before water struck.

Clay & blue joint - 40 ft.

Sand & gravel, wet.

Much water in gravel.

The main part of the ridge over pit is long and quite round cut steep, &c.

Even when it rains very much & runs down, but it in there, & below some gravel there is hard, white rock for some.

Cut 189
Familofium. yellow.
round nodules - upper
nodules larger and distinct.
12 ft. dep.
Red facies is calcium
just at road level.

Cut 87. Ravine - 6 ft
temp. fragment
of shale

Cut 88 extends S. up
hill, to meet & include
Cut 87.

Minor cuts about along
new section Cut 89 &
Cut's 90, & they all
show nodules larger above,
with numerous small
irregular nodules,

Aug. 28. Friday

Parties conduct + procedure
continues work in lieu of Mon. Tues.
Commence with cut 29.

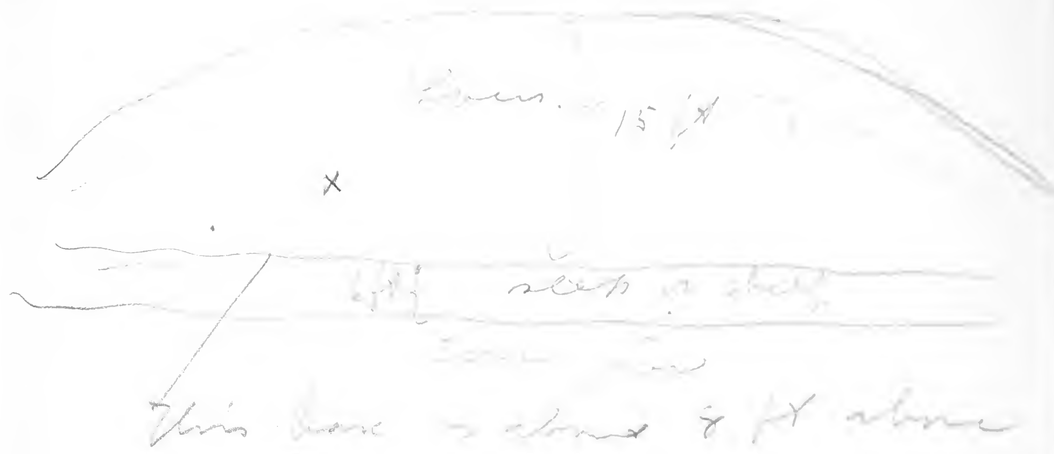
Cut 29.

(Readily identified as cut. 28)
Cut 28. This is on S. Side of Rocklin's cemetery, it is about 8 ft. deep, — a slope down town E. It — consists of sandstone, but as far as I could see it shows fine grains, light, light yellow sandstone here, — no fossils or anything very visible, but appears not shown.

Cut 29 is in yard, where grading appears it. It is irregular (which is for sheep or plan), probably (unclear), + on par as I could see like 28.

Cut 30. Is irregular, back of town.

Cut 26 is over 20 ft deep, 99 + a fine exposure.



The main one is yellow, light, with medium coarse grains, + in them shells & fossils + other shell layers — one about 3 in long + then about 2 — shells are or 20 + layer only 2 in thick.

See shells + sample (for #)

Also ordered,

The upper 4 or 5 ft. has small rocks in, small rocks

cut 23 - E. side about 18 ft. of same yellow-brown with fragments of fossils. Took a few inside Took sample at 15 ft. from top.

Formation about as in the side sampled.

Took sample of whole (where cut is 6 ft. deep only.) at 2 ft. from top in middle layer.

Also one 6 ft. deep in top of lower layer.)

Nodules are more scarce in stratum 3-4 ft.

cut 24 - On E., N. & W. sides is badly shattered, but as far as I could see is same as 23

cut 24 5 mile - is about same - 8-12 ft. - one is in a fourth year. Is about ½ way down hill

cut 25 is a small cut 4 ft. deep - with 2 ft. nodules. Four shells & fish bones nodules. Some yellow sand about 6 ft. below the 170 ft. joint.

cut 27 - one of the shattered & irregular but not far apart as in cut 26 - one with nodules & fossils.

It consists of two beds; the lower is about 117 ft. & about 8-9 ft. deep & some of the shells. from same as before

Layers, nodules, etc as before

The upper cut exposes about
to bot of hill, & is about 12
ft. deep. Upon examination
(including upper undercut layer)
same as below, but I could
see no fossils.

Cut 31 is overgrown, & not
worth noting.

Cut 32 shows about 10—12
ft. of yellow loam, & near
the bottom, on your south,
some 14-20 ft.
from roadbed & fossils in
bottom. Base is about 10
ft. above intersection of ditch

Cut 33—
This is mostly yellow loam
as before — undercut, shelly &
all. Upper loam nodular
& fossils. There were
mostly in loam from & &
hardly from sandstone.
Lamination flow distinctly in
upper sandstone

Cut 33

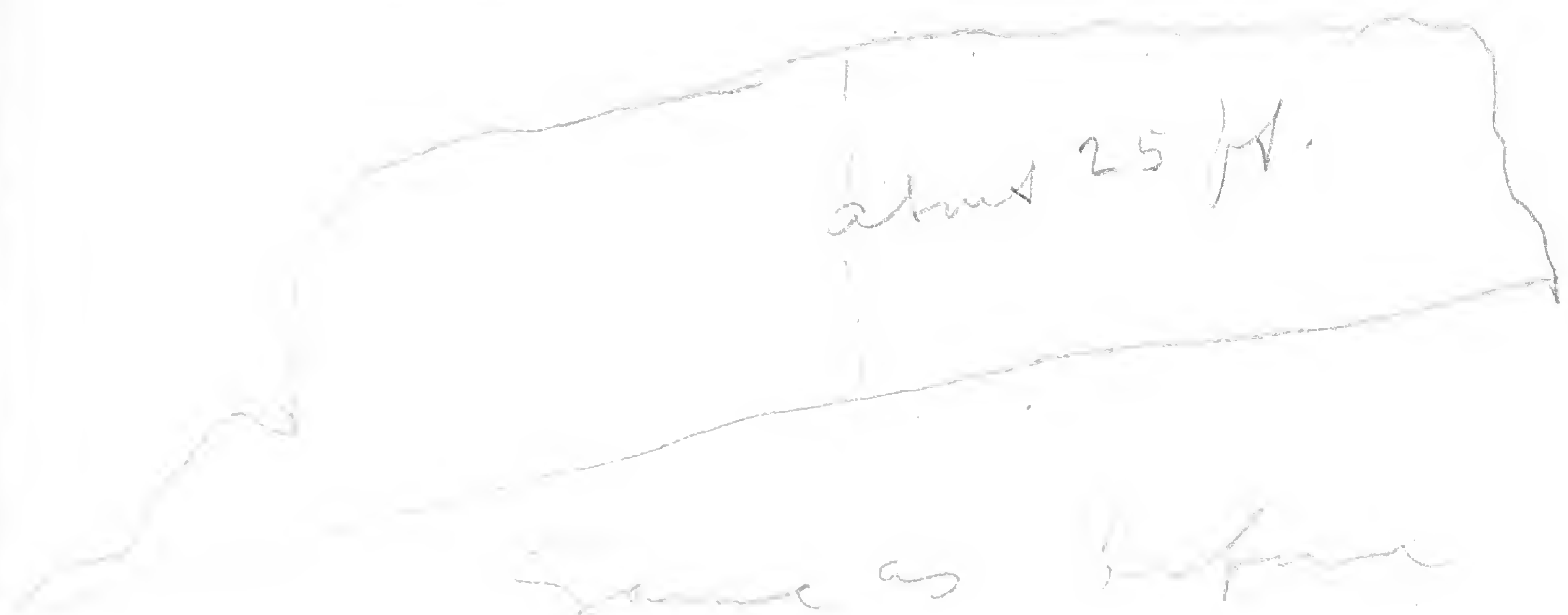
Cut 34

This fossils. They are hard
eating; it is yellow loam
with abundant shells
I found one fossil this
in upper sandstone especially
in about 4-5 ft. bed
Took sample 17 ft. from
top. Upper undercut = 5 ft
yellow loam = 12 ft
Few fossils upon a
thin undercut but many
do occur. The E. end of
this cut (road) is marked with stone

Cut 35.

Same yellow loam — locally
[illegible]
fairly [illegible] [illegible]. Dip to [illegible]
Lamination distinct on
weathered surfaces [illegible] [illegible]
[illegible]

Cut 36 — 2nd [illegible] [illegible] of [illegible].



Same as before
[illegible] [illegible]
[illegible] [illegible] [illegible] in
with 35 & 36.

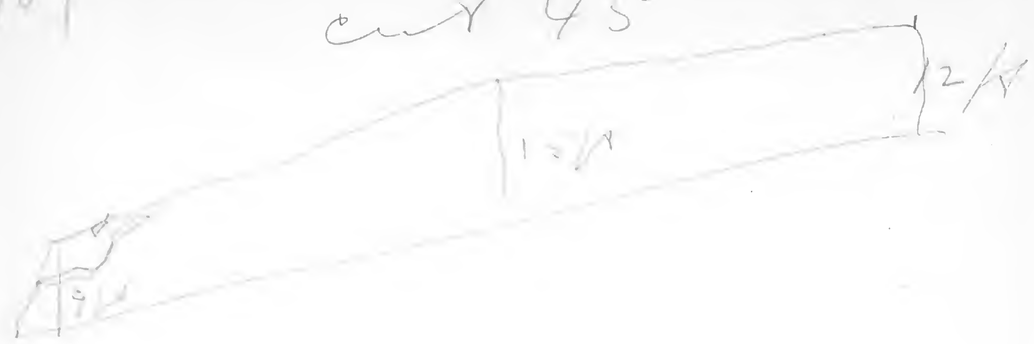
Lamination distinct on
weathered surfaces where
there is no other overwash.
These cuts are both
drawn as the loam is cut
back [illegible] & they are
much [illegible]

Cut 44 — ½ block.

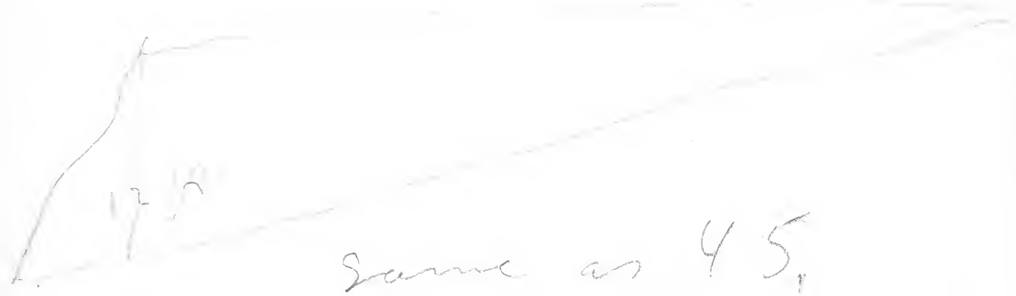
[illegible] [illegible] [illegible] —
nodules [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible],
[illegible] [illegible] [illegible] [illegible]
nodules.
All [illegible] [illegible]
[illegible]

Cut 45 is a block long
Yellow loam, few [illegible]
nodules & [illegible] few
shells.

cut 45



cut 46 is continuation across bottom ½ blk long.



Same as 45,

Only a very few fragments of pottery, - not identifiable

Another large fragment, - modern ware

cut 47 - S side

Modern large burn, modern - of many.

Burn in profile

Double burn one a quarter turn E. end

E. end

Both samples 3 ft from E. (in modern burn) & 12 ft from top - at base of cut.

In afternoon I set up apparatus & took first reading at 4h 4m 4s 0ch
The day had been exceedingly melancholy, [illegible] for the most part sunny, though hazy. On the hills a haze and a little rain in the morning. The wind all day was from W. & S.W. & S. In afternoon (latter half) it veered to S.E., & blew that way all night. It was supposed by many Brandon must be the [illegible]
When I took first readings the sun was from 4 to 5 minutes, & from 3 the atmosphere, & from 1 string & at from 2 about earthly.

Aug. 29 - Saturday.

The sky was cloudy in mch, & could hear thunder. Wind was strong enough at 6 o'clock & away [illegible], Light dew.
The movements of upper clouds only a difference of 25,2 m. from 7 am yesterday & 7 am today, but no cirro in from SE to [illegible] point (sta. 1) does not collect the wind.
When I took first readings at 7 am, stars 4 felt large a little (sta. 4), sta. 3 more denuded, sta. 1 fairly, & sta. 2 scarcely at all.
In clouds [illegible] Height 1 & 2, at 7, [illegible] less than ½ degree apart.
At 8 o'clock readings obs. 4 was approx 4 stg 5.4 large & new station scarcely at all.

10th

at sta 4 - 8^45 75½ - 70

on [illegible] hill - 75 - 70

strong [illegible] wind

(5211 ft from 950 - 955)

on top

(4407 [illegible] 940 - 945

at 4)

Harold Tucker is [illegible]

Again at 9 [illegible]

[illegible] 1 & 2 (Central) &

[illegible] then ½ degree

[illegible] [illegible] [illegible]

The dry thermometer

[illegible] [illegible] ½° [illegible]

no 1.

Readings at Points 3 & 4 at

8 & 9 were 20-25 min.

after the hour. [illegible]

in order 1, 2, 4, 3.

at 9 - 1 was windy & somewhat

sunny, 2 cloudy & quiet,

4 (old) quite windy, 4 (new) almost quiet,

3 quite windy, & both 3 & 4 sunny

108

at 10. no 2 was slightly sunny

(through leaves) & a gentle

[illegible] [illegible] [illegible]

no 1 quite windy & sunny

at 4 (old) [illegible] [illegible]

[illegible] (new) somewhat windy & [illegible]

at 10^20 [illegible] at 3 was 529 ft

a [illegible].

at top [illegible] = 740 ft [illegible]

([illegible])

78 - 70½ - [illegible]

77 - 70 - [illegible] 3

at 10 & 10^20 [illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

Part of the [illegible]

[illegible]

at 11 - 2 cloudy,

1 cloudy

4 old cloudy & little wind

4 new somewhat sunny & little wind

at [illegible] some "

86 - 74 - at 6th of nine - 3 m after reading at (3)

(3 = 84½ - 72½)

at 12 - Station 7 - sun (clouds of trees) + little gust

Station 1 - Sun + wind.

4 (end) Sun + wind

4 (mm) " " less ":

The Cuckoo ceased, at 12) was partly in cloud + partly in sun (between trees).

At 1 o'clock it was quite sunny (temp hung) + the afternoon at 2 reached bits of sunlight, the wind had veered to due S.

At obs 4 same wind, at noon 4 cloud none.

at 3 wind very strong +

The transition between 1 + 2 is about 2 mins walk + contains:

Rhus glaucus (low)

Dysphania spp (low)

Bursaria (")

Amaranthus cruentus

Tribulus terrestris

Verbascum (mic)

Aster simplex.

Cynara cyprius

Helianthus (just out)

" rigidus

Cucumber

Tagetes —

Ipomoea muelleri (low)

Euphorbia oblongata

Young trees etc.

Pinus pinaster

Lilium spp (Cucumber ?)

residue)

At 2 o'clock it was still quite sunny (but hazy) & the wind shifted to W. & S. & was quite strong.

At 3 o'clock Same

hazy sky & fitful showers 4, very heavy ones at 3, & one at 1, & small ones at 2. Wind W. & S.

At 4 o'clock hazy sunny, with round towards N. & E., after at sunset & very hazy at 8. Rain at 2 very little spots.

At 5 o'clock, hazy sunny, Bright sun at 4, wind S., sky nearly clear at 2 o'clock; at 1 moderate haze, at 6 o'clock sunny & good haze at sunset nearly calm & sunny at 8 perfect haze) & still Breeze

When going in from due S the wind S. & total moderate wind, no. & frequent.

At 6 o'clock

2 – Some sun – cloud & haze

1 – Sunny & hazy

4 (cal) Hazy & sunny

4 (sun) – Hazy & sunny haze

3 – Sunny & hazy & a moderate breeze.

At 7 o'clock

All in shade & wind somewhat subsiding.

Aug. 30 – 1908

Set up one station at 6th & Woolworth Ave, on a ridge just opposite Woolworth & W. of 6th. This was timbered, but now has only a few trees, It faces N.E., & is well exposed S. & S.E. & E (i.e. there are no buildings to interfere, the field being clear for our purposes. The area is now overgrown with blue grass, and of course some weeds.

The area is typically of the loess country covered with forest on the Nebraska side.

Mr. Gilder says in digging he finds black soil on W. side of river (on ridges)

but not on E. side.

My Council Bluffs stations were same as before.

Aug. 31 - Monday

Rain nearly all AM.
Returned to Mt. Valley at noon
& at 4 o'clock down and to
Ogden just
the dust above saw (Kaiparowits)
so heavy blackish joint
clay with pockets of saw,
bobbles & oxidized tuff.
There is no real yellow
joint clay.
Took photos:
1 - Looking E. from Coxi knoll
+ cliffs on which
Grand Hts are seen
2. Kaiparowits from

Ditches fill.

entire hill. — Pole

3-4 — Kaiparowits

Zion Park

Cretaceous

Water ground Talus.

Work camp of Kanab
joint clays 3 ft. from base

Photo (5+6)

Kaiparowits

Kaiparowits

Sandstone

Sandstone

Sandstone

Sandstone

Zion Park

Kaiparowits

Zion Park

Water gravel
Terrace

Some piece of limestone flake with glacial markings, suggesting that the layer had been frozen before we came. (See above.)
The tombstones & pebbles in ground Engravings are worn & rounded - even when angular & sharp.
Contains in Kansas - Lithostrotionella, Zaphrentis, red Spirifer, Productus (Rugosa) (fresh) etc.
These are also found on rolling (some large) in both Kansas & Missouri.

9- Look N. & E. Cross first to just above & to right of top of small tree below Cross Lane & barn.

10- In center of fields & just above the sycamores & Jake Diehl's hut. Look S. & E. from same pt.

The wind was northerly, & the sky was a less hazy, as if has been all the time.

Spent morning in writing letters, & packing for trip home.

Sep. 1 - Tues. 1908

Day very fine, pleasant, cloudy, no wind.
Started for Ottawa at 7.05 AM.
Reached Ottawa in time to get freight for home.
Reading Acts 9 - and New Testament
He has a vision of
The same valley as that which shows one road 12 ft. wide, cross-bedded beautifully, - coarse sand & fines, some clay in streaks. It is shaken with the wind, & sand

layer in Miss. Valley. Cox's fist at Thurman also nodules of blue joint clay, as at Cox's. Oxidized nodules & bands are also common.

The clay nodules were evidently rolled into their final form, cylindrical & flattened from by water while still soft and bottom and then covered by N thin sand,

1st Arcola woods. Fenders woods

Juglans nigra
Ulmus fulva
Salix amygdaloides
Celtis
Fraxinus Lanceolata
Tilia americana
Symphoricarpos orbiculatus?
Rhus glabra
Populus
Parthenocissus quinquefolia
Ribes missouriense
Carya
cordiformis candicans?
" tomentosa
acer negundo
Populus deltoides.
Osage
Vitis riparia
Crataegus crus-galli
?
Acer saccharum?
Rubus (Red)
Prunus americana

Zone on dry ridge on
edge of ravine on
side road

1 Photo 1-2 Looking N.W. from
junction of roads

1 Photo 3-4 looking N. from same
to

1 Photo 5+6 looking E. ~~E. 25. N~~
largest on ridge to right
of photo

1 Photo 7+8 Looking S.E. from
same point

124

Cut 2 ms on both of drums
✓ volume 15-18 M ; sudden
turns - Exercises on
vocalic sounds

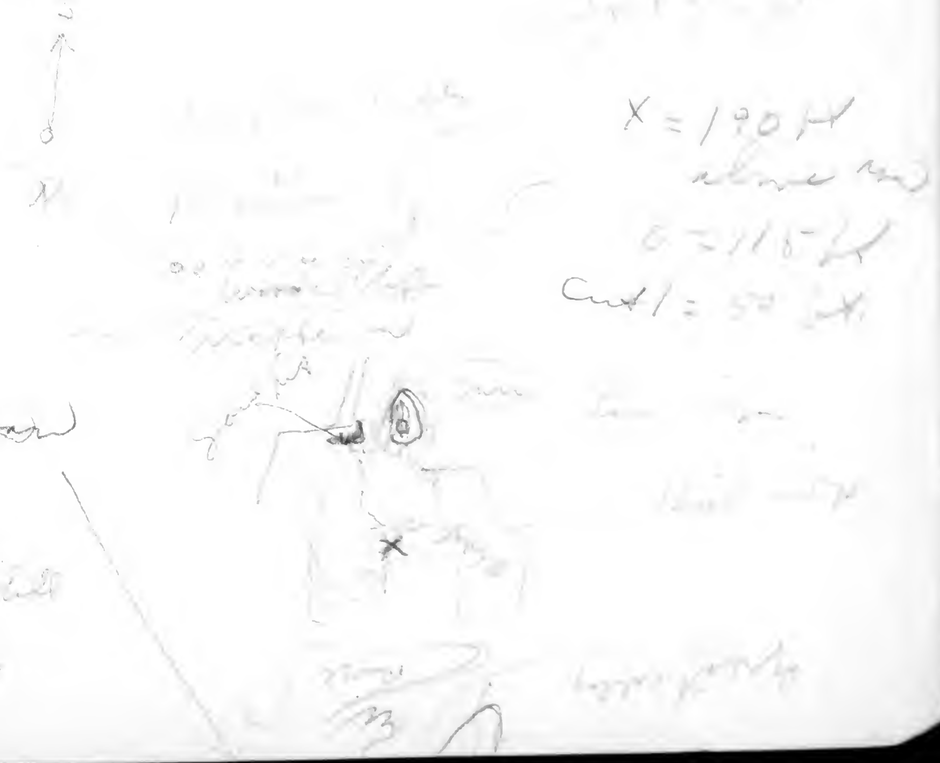
In mus | pit seats to out
centers | sides of theatre,
persons of | blood, a vaulted
8 feet |

✓ Plate 1 - View of Pueblo
valley ruins, Cañon
✓ Plate 2 - View of Walpi
mesa Pueblo.

Add to Inscriptions
Cañon Tularosa
Mesa Verde - Cliff
Petroglyphs ammon

Sep. 2-1908 125

Draw Zuni & Zuñi.
✓ Plate 21 & 22 Looking N.
View of pit at Zuni
✓ Plate 23 & 24 Looking W.
from Pueblo of Zuni
Stone hills in background
mesa, Cliffs mesa & cliffs
Cañon.
On S side Mountain the
bluff & ridge on left the
they run down on the right
Valley and a flat basin



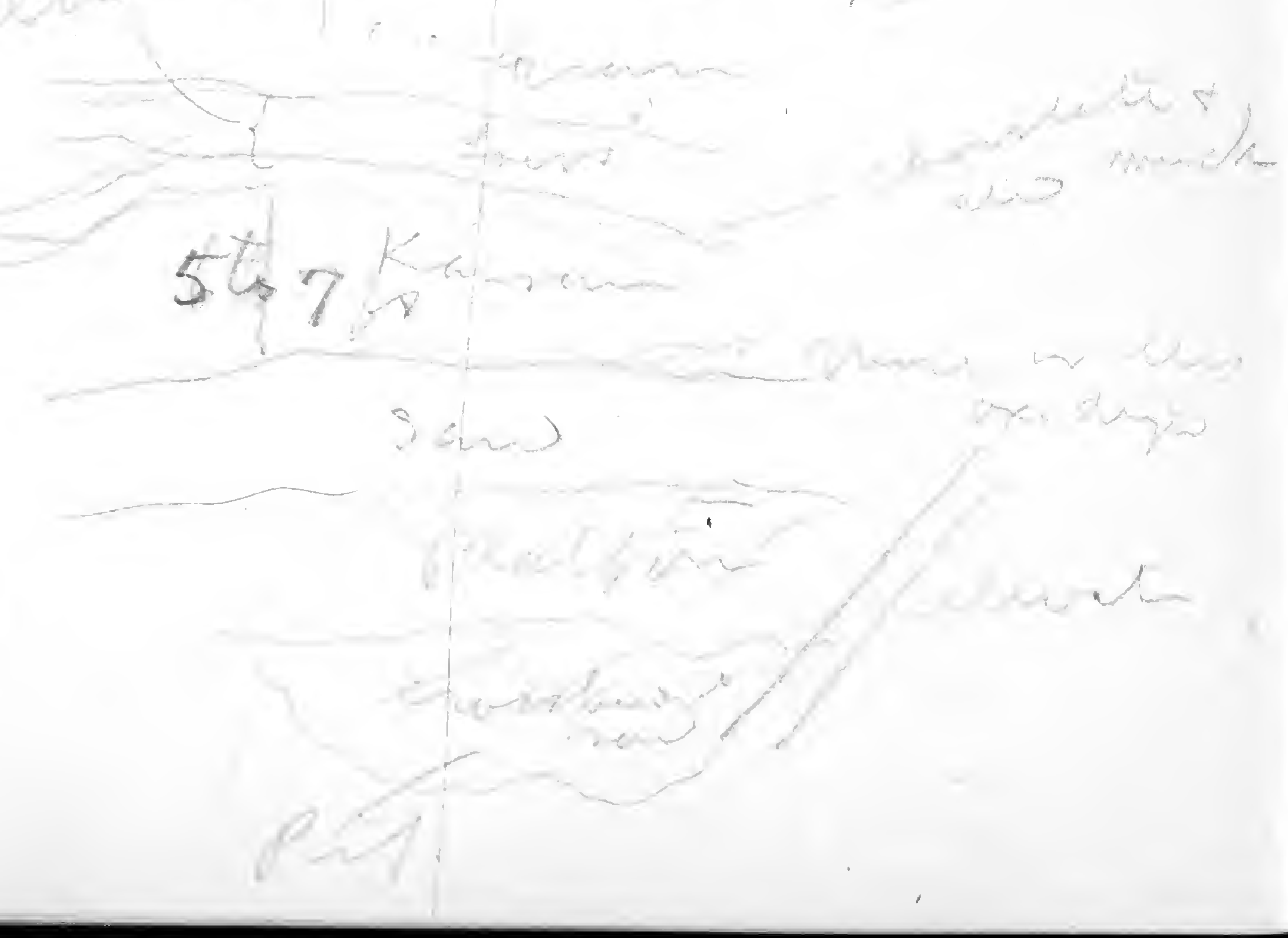
collected (in Elliott's pit)

Sphaerium -
Pisidium -
Limnaea -
Physa -
Segmentina armigera
Planorbis bicarinatus
Amnicola (or Bythinella)
Valvata tricarinata
Planorbis dilatatus ?
Polygyra ?
Pyramidula alternata
Succinea obliqua
Vallonia -
? pupilla.

Ancylus
Unio

[illegible]

✓ Photo 27026 - Pit end 2 ft (deeper higher up)



Four small pieces of worn bone in upper part of sandy layer (above at entrance of pit).

(or NE)

On E. side of pit (above shelf) this shows

Reddish joint clay 5-6 ft

Black humus [illegible] sand [illegible]

1 ft +

small boulders

1 to 2 ft brown (strongly oxidized)

2 ft oxidized [illegible]

1 ft

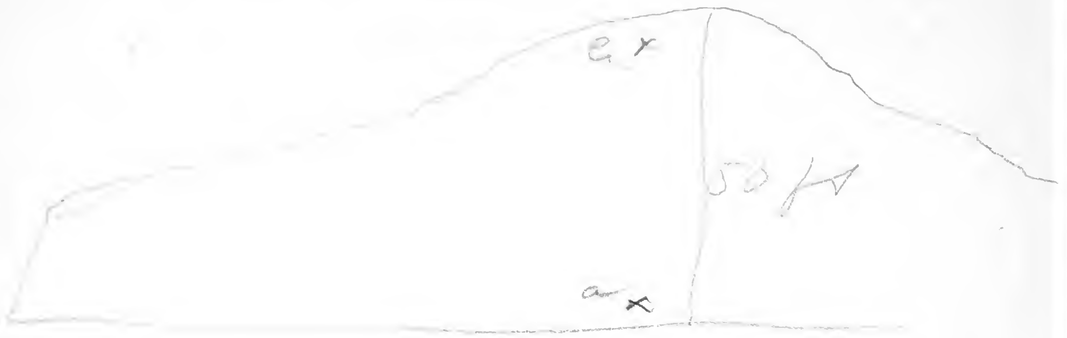
1 ft [illegible]

3 ft [illegible] ([illegible])

Total exposure now about 12 ft.

The man in big farm on large [illegible] ([illegible]) a [illegible] (small) and a [illegible] probably [illegible], but flat

Cut 1. Zone



All Cuts
Different zones in Cut, 2a
3 ft. Cuts made mostly 1/4 in
before.
Sample (a) 2 ft above base
" (b) 2 " below top

Cut 12-45 started for Cuttings.
The road follows about 10 ft
50 ft above bottom,
In the Cuts from Sugar & gravel Cuts
Cut 3 - Kansan drift, shows in
several places in road. At Cut
3 a cattle loss appears in
Jensen with fossils was divided
Zoote photo 29 - looking
N.W.

Cut 4 - also on higher point of
road, is irregular, in W. side
road, 5 -> ft. deep, & shows
upper 3 ft (mell) reddish brown,
Lower part richer reddish
yellow brown with
nodules & flow shales. Base Cut
Cut 5 - in ft cut
shows 7 ft of yellow brown
with few more reddish bands
& more reddish near bottom
in places.
Cut 6 is reddish 7 ft deep
in places.
Flow less common in cut
Pleistocene sand may be there
in base - Kansan
against it, - length of
bottom contact & regular
Kansan ground above in road
This is right at angle of
N. side. Cut is again a
Pleistocene bisher point.
Next Exposure cannot be
seen here. The base Cuts O.K.

130 The water front is 20 ft, however, one may be hasty onward

Cut 7 is at right angle Right at road (NW side) The bank is washed show Kansan drift only, but away up, probably 75 ft. higher There is quite a bank of loess dun & slumpy & reaching nearly to top. It is yellow loess.

cut 8 is a similar slumpy bank of loess, away up near top. & NW of road. Kansan drift appears also

cut 9. This has up hill & is steep like & precip. ✓ Photo 30 is taken N. & E.

The row is 35 ft above creek (bridge) & shows Kansan drift (at the highest point)

cut 9 is — ft. above road (to base) & is about — ft high

Drift clay shows on slope base 60 ft. above road,

Base of cut (at north end) is 80 ft. above road, cut 30-45 ft. high & top of bank is 165 ft. above road. Upon summits of hills & a little on slopes is evident normal, & first clip

a gravel bed between road & cut 7 (3. W. of bridge) shows crossbedding, dip, & is probably stony gravel [illegible] 5-6 ft. exposed. Where clear of talus appears to be in two & three [illegible] in [illegible] Kansan drift

Saw Stones loose on Mesa or below

Beach terrace not necessarily a beach but flat

Box. 1 - Aug. 25, 1908 (3)

5 - Same as (2) p. 22

6 - Looking N. from point to saw 1 - p. 22.

7 - Same as (6)

8 - Looking NW. from same pt. - across valley, or up valley - p. 22.

9 - Comrie Bluffs. - N. across reservoir - p. 42

10 " " " - S. into Tavernit - "

11 " " - E. & S. from my station. "

12 " " N. & E. " " " Same pocket. "

13 } " " cut on 9th Ave. - p. 43

14 }

15 } " " Looking N. at cut - 9th Ave.

16 }

Skiing

1 - Spoken - p. 22

2 - Looking S. at trail - (see anemometer) - p. 22

3 - " NE. into ravine along Snyders Hollow. p. 22

4 - Same as (3)

17 } Comrie Bluffs - Distant view of

18 } nodules in cut on 9th Ave.

All — X marked on U.K.

Box, 2 Aug. 25, 1908

19 } B Sylvanus upon station 2 - p. 62
20 } Marked.
21 } Shirley, "
22 }
23 } very poor
Looking up Soldier in. from bridge
Since rec. 26 - p. 64.
24 } good
25 } Looking up Mo. river from bar W.
Missoula - p. 64.
26 } O.K.
27 } Mo. bar showing marl p. 64
28 } Helix fluvatilis
29 } Looking S. into cottonwood p. 67
30 } O.K.

= taken Aug. 25-08
2 } Sand dune with Cassia & Cottonwood
6 } & Lillie Dalea - p. 67.
7 } Sand dune & pool.
8 } all not marked are O.K

Box, 3. Aug. 31-1908

1 – Looking E. from S.P.R.R. bridge Cor's – Mo. Valley
2 " " mouth of Flint Creek " " —
3 } Cross bluff, looking S. E.
4 }
5 } Cross bluff (mouth) looking S. of E.
6 }
7 } Looking E. (valley mouth) Cor's
8 } Granite Pit, Mo. Valley.
9 } Looking N. E. from Cross bluff
10 } " S. E. " Dicks "

Box 4 - Sept. 4-1908

1 } from 7 miles bluff - Mo. river bottom
2 } valley. 9/1/08
3 } Looking N. from mouth Flint,
4 } 9/1/08
5 } Looking E. & S. of Flint mouth
6 } and Mo. valley - 9/1/08
7 } Looking S. E. from mouth Flint.
8 } Looking from Carlton 9/08
9 – Mo. valley
10 – View of Granite mountains 9/08
1 } Looking S. E. from bluff mouth Flint
2 } 9/2/08
23 } Looking N. from mouth Flint
24 } Junction (from X). 9/2/08
25 } Looking up from bluff Flint valley - Junction
26 } Cross bluff looking - 9/2/08

Box 3 Sept. 3 (Missoula Co.)
11+12 – Maples Canyon. 9/4/1908.
27 } Security Mill, Junction 9/3/1908.
28 } Hill 26
29 – Bed of Lake Missoula Junction 9/3/08 – p. 128
30 } Hill 26 Cut Junction 9/3/08

Returns from Omaha for
winter — Monday, Aug. 24—

Monday 11 —
Tuesday - 11 " " " "
Wednesday - 111. " breakfast.
Thursday - 111 " supper.
Friday 11 " dinner & supper
Saturday 1 " dinner & tea & lay
2 Chicago

Monday - Had dinner, supper, lodge
Tues - Breakfast

Aug. 25 - Hospital
Incidentals and wine 2.5
Tues - Fare .75
Flowers, telegram, and
Flowers 2.00 2.75
Aug. 26 - Fare to Omaha 1.25
Lunch - supper .25
Aug. 27 - Lunch 30 Bonbons .30
Aug 28 - " 25 Apples .35
Aug 29 - " 25 Fare to Omaha .50
car fare .15
Aug. 30 - (Sunday)
Aug. 31 - Horse & Buggy Aug 10
Telegram & Sons 40 Aug 10
Hotel Bill Aug 30 — 6.50
Sept 1 - Fare & Omaha .77
" " Lunch .14
Sept. 2 .25
Costume - lunch 25 .25
100 .25
Sept 3 - Costume - livery lunch
Lunch - check 25 —
Fare Omaha & Chicago .77
Omaha - hotel 100

Ext - Engineering News
220 Broadway, New York.

Aug. 13 - 1908

Contains Grunsky's
article
Expansion from the
Salton Sea.

Aug.	17 - Car fare		.05
	Meals Council Bluffs		.70
	[illegible]		10.00
"	19 [illegible]		.43+15.
"	20 - Lunch Richardson		.50
	Horse hire		.20
	Lunch, Mo. Valley		.45
Fri.	" 21. Papers 20 Stamps 5, Ink 10		.35
			9.00
Sat.	" 22 - Hotel Lunch Aug. 18-22 -		
	Living, Bruce & Robins.		
	Aug. 18-20 -		5.00
	R.R. to Council Bluffs		.43
	Carfare		.30
	Lunch		.35
"	24 Carfare Omaha		.60

Account closed to

Aug. 24, 1908.

Aug. 7, 1908

R.R. fare to Burlington	$ 1.54
Hotel	1.80
Carfare	.10
Return to Iowa City	1.54
	$ 3.68

Aug. 8, 1908.

Hack, Iowa City	$ .25
R.R. fare to Des Moines	2.41
Hotel	.50
R.R. fare to Council Bluffs	2.86
R.R. fare to Mo. Valley -	.43

Aug. 10, 1908 (Mo. Valley)

Bottles & cork.	.10
Vials & corks.	.10
Fruit jars 5, glass tubes 15, file 5	.25
5 F.X. mecanol (rule) hooks	.40
note book 5, mileage 5,	.10

Aug. 12, 1908 (Mo. Valley)

Pins 5, thread 5, chain cork 5, rubber tube 5	.20
clips 5, rules 5,	.10
	.17
Aug. 12 - [illegible]	1.00
Two meals	.17
[illegible]	

Aug. 13 -

	.34
Aug. 14 - [illegible]	1.00
Two meals	.17
" 15 - Cork, tubing, bottles	.13+.70
[illegible]	